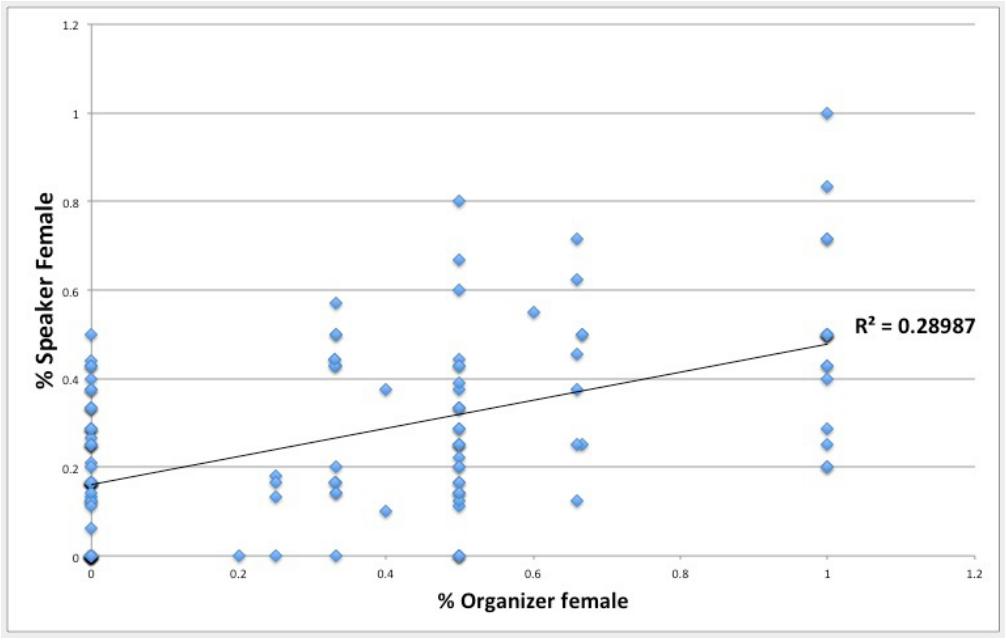
Gender influences in conference participation.

In 2012 Lynne Isbell and her colleagues published a fascinating paper looking at the role of gender in conference proceedings among primatology meetings. In it they found that male organized symposia had half the number of female participants than those organized by women or both men and women. This was particularly interesting because primatology is a discipline where women have the numerical majority.

To say this opened up a can of worms would be an understatement. It provided a great mechanism for discussion on twitter and in the blogosphere (for good write ups of the original paper check here, here and here and of gender representation in geosciences here). A positive outcome of these discussions was that Jacqueline Gill (soon to be at U of Maine), Karen Lips (U of Maryland) and Mollie Thurman (here at Columbia) and I have decided to do a similar analysis at data from the Ecological Society of America, American Society of Ichthyologists and Herpetologists and the Society for Conservation Biology.

We are still in the preliminary stages of this research, but so far Mollie and I have worked up the data from the SCB meetings. We have looked at data from symposia for which we were able to identify the gender of the symposium organizers and the symposium speakers. Taking data from 1999 (n=6) 2002 (n=16), 2006 (n=18), 2007 (n=19), 2009 (n=11), 2010 (n=36) and 2011 (n=42) we were able to plot the data that we present here:



As you can see this is super preliminary (i.e. stats such as they are were done in Excel not R), but from this first pass we can see that there's a fairly strong relationship between the two variables (r^2= .29). What this means is that (at least from the preliminary data) that woman organizing symposia provides more opportunities for women participating in science in general. We are going to be expanding this analysis, but I wanted to throw it out to the general community. We'd love to get your thoughts and comments.

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The major things we need to think about:

1) Membership. I want to get a better idea of the number of women in the professional societies. One reason why women are under-represented might be that there just aren't that many women. I suspect that this is not true, because the effect of gender on participation would not appear otherwise, but it's still something I want to investigate more

2) Trans scientists. We are examining this data through an explicitly cis frame of mind. We do not have the data to identify the degree of trans scientists participating in these conferences. Sadly trans scientists face numerous challenges and we would like to provide data to highlight these issues. However there were no self-identifying questionnaires at these conferences, so sadly these scientists remain invisible in our analyses.

Again, I can't stress enough that these data are preliminary, but as I am an advocate of open science I want to open this up to the community at large. Tell us what you think.

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6 Comments

hilaryparker
FEBRUARY 20, 2013 AT 10:18 PM

Great idea. One thing I might try — what percentage of women are there in Conservation Biology in general? Let's say it's 50% — I'd take that percentage, and make a dichotomous variable using that as a cutoff (so over 50% vs under 50% women). Then I'd look at that distribution over the % female organizers. Just looking at that scatterplot, I think that'd show a pretty marked difference as the % of female organizers increases. And that would also aid in interpretation — "Women were underrepresented a larger percentage of the time as the % of female organizers decreased."

Chris Parsons
FEBRUARY 20, 2013 AT 11:24 PM

One thing to consider is that within, for example conservation biology, there may be many sub-disciplines that might simply have more, or less female researchers and thus the probability that a symposium organizer being female might simply a relationship to that. There are certainly some fields which have low numbers of female researchers – walking into a SCB symposium on the role of hunting in conservation one year, I found it full of men. Whereas walking into a marine conservation symposium the same year, there were far more female participants in the audience and speakers (and the organizer was female). So might this not simply be a relationship within the field. An estimation of the gender balance in the audience would be interesting to see. For example, it was noted at a marine mammal conference a year or so ago that the audience was dominated by female scientists, but on the stage was a panel that was entirely male.

Britt Koskella
FEBRUARY 21, 2013 AT 8:15 AM

Very interesting! I'd be keen to know whether female organisers draw a larger pool of abstracts from female authors. Or we're these data for invited speakers only? Either way, it's a striking trend. Our seminar organiser here at exeter is keeping data on what proportion of male and female speakers are unable to accept the invite, and then using these data to invite proportionally more female scientists in the future to get closer to our goal of 50/50. More data needed, for certain. Thanks for sharing this!

labroides
FEBRUARY 21, 2013 AT 1:44 PM

This is a very good point and we are trying to figure out how to parse the data by sub-discipline. We have data on the title for each of these symposia so at some level we can bin them into broad categories “marine” “hunting” “climate change” etc. I should note that the one symposium that had 100% women speakers was one on the role of gender in conservation. That alone is interesting to think about in terms of who is invited to participate in these conversations.

labroides
FEBRUARY 21, 2013 AT 1:51 PM

Britt. This is a really good point. We haven’t looked at what factors such as lack of childcare at conferences, breastfeeding difficulties etc. might make women (especially those with small children) reluctant to accept invitations to symposium. Since it is often women on who the brunt of the childcare responsibility lie, conference organizers who want to increase participation in women could develop those conferences with childcare friendly infrastructure in place. The SCB actually does a pretty good job of this with many past meetings having affordable daycare on site.

Michael McCarthy
FEBRUARY 22, 2013 AT 3:45 AM

A couple of observations:

The average speaker ratio (based admittedly on your preliminary analysis and linear regression, so only rough) hits 50% only when all the organizers are female. On face value, that would say that a gender bias in organizers is required to achieve a gender balance in participation, which is (only?) a little surprising. Even when there is a gender balance in organizers, there still seems to be a large gender imbalance in speakers. Comparing the ratio in these sessions to the overall gender ratio of the society (as you indicate) or at the conference (you could just randomly sample other speakers in the conference rather than have to assign gender to all speakers) would be helpful here, but I suspect that it is close to 50% female.

There is a lot of unexplained variation. It would be interesting to know whether some of that can be accounted for by things such as awareness of (and commitment to?) gender equity in science, the degree of unconscious bias of the organizers, and also whether the organizers used particular efforts to avoid bias. It looks like some sessions organised exclusively by men (only a small fraction) achieved a gender ratio that was at or close to 0.5. Did they do anything special compared with the others? How about those sessions run only by women?

The degree of unexplained variation (this is the extra-binomial variation, as opposed to noise due to the binomial nature of the data) would be interesting to estimate and report. You could do it with a binomial model (e.g., logistic regression) with a random effect for session (#iamnotmeaningtotellyoutosuckeggs).

I note that the journal Nature has committed to reducing gender bias in authorship of its invited commentaries. This sort of action relies on actually looking at the data and identifying problems, so good on you all for working on this.

Comments are closed.